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The Impact of Migrant Labor Force on Housing Sector's Efficiency of Iran

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Iran has been host to the largest number of migrants in the form of Afghan refugees since 1982. These refugees have been permitted to find jobs in Iranian labour market, particularly in the labour intensive markets like manual jobs and construction activities which could not easily be filled by Iranian workers. The research provides a critical review of the impact of migrated Afghan labourers on the efficiency performance of the construction sector of Iranian economy during the period 2006 – 2009, using data envelopment analysis. Results show that, despite the high costs incurred by Iran as host to more than one million refugees, it also benefited from the presence of Afghans. Statistical analysis shows that there is a significant difference between the efficiency scores of the provinces using more migrant Afghan labour force and those having less concentration of such labourers in construction activities. That means most of the technically efficient states in construction activities have the opportunity to employ Afghan workers, since they used to be a very competitive and flexible labour force with unattractive payment. As a result the repatriation program of the Iranian government on Afghan refugees could be limited because of the low levels of substitution among Afghan and Iranian workers in the field of construction.

Keywords: Migrant, Afghans, DEA, performance, construction, Iran.
JEL Classification: R23, C44, J61.

1. Introduction

Studies on the role of housing Construction in economic development, including Burns and Grebler (1977), Wells (1985), Phang (2001), Leung (2004) and Harris and Arku (2006), examined topics like

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employment and income effects, household savings effect, labor productivity effect, health influence and growth effects of housing investment. Most of these studies suggest that, housing investment may affect economic development through its impact on employment, savings, total investment, and labor productivity (Chen and Aiyong, 2008). Moreover it has been well demonstrated by the known hypothesis of Turin (1973) that because of the relationship between construction activity and economic development, housing and related infrastructures can revitalize and sustain economic growth, employment creation and poverty reduction. After analyzing data on all significant countries for the period of 1955-1965, Turin (1978) found that the construction industry can play a central role in development strategy of many less-industrialized countries by creating durable and productive employment at a relatively low level of capital intensity.

Economic activities in Iran are dominated by industrial sector, which represents about 45% of the country's GDP and includes oil and gas, petrochemicals, steel, textile, and automotive manufacturing. The services sector accounts for another 43% .Agriculture continues to be one of the economy's largest employers (11%), representing one-fifth of all jobs (Ilias, 2008). Iran is one of the few major economies that did not suffer directly from the current downturn crisis. High oil prices in recent years have enabled Iran to amass US$ 97 billion in foreign exchange reserves. Although this increased revenue has aided self-sufficiency and domestic investments, double-digit unemployment and inflation remain while the economy has seen only moderate growth (World Bank, 2009). In the wake of the global economic crisis, Iran has found its economy facing pressure from the rapidly declining price of oil, which plummeted to $46 per barrel in early January 2009 from a high price of $147 per barrel in early July 2008 (Qazavi, 2009). Thereby Iran's economic growth dropped to 3.3% between March and September 2008 and the country planned to reduce its dependence on oil export revenues by building up other sectors of its economy including housing construction sector.

Normally construction of housing and commercial buildings is carried out with the participation and collaboration of the owners, people's assistance, support of banks and the free technical and engineering services from the government. The role of the Ministry of Housing and Urban Development and its affiliated Housing

Foundation is very important as these are the two major organizations for the approval and implementation of special plans, housing projects and building codes including earthquake mandatory codes. Annual reports of Iran central bank on housing economy shows that at current prices, investment in housing sector increased more than 75 times during the period 1975-99 and the average share of housing investment in the GDP has been 5.7 percent within the same period. During the period of 1971-2000, on an average, 33 percent of the total investment in the country was in housing, and the average share of the private sector in investment on housing has been 92.5 percent, thus accounting for the bulk of investment in this sector.

During the past three decades of economic planning, housing has been viewed by the people as an important property investment asset in Iran. This means that housing acquisition in is not only motivated by consumption purposes but also by investment purposes. For them housing is an effective property investment vehicle as it delivers the lowest risk-to-reward ratio when compared with traditional investment alternatives such as stocks, foreign currency and gold coin. Moreover, housing returns exceed the rate of inflation and also there is a positive and significant relationship between housing returns and the rate of inflation (Masron and Fereidouni, 2010).According to Zanjani (2006), between 1966 and 1996 there was an annual increase of 3.44 percent in housing units, whereas the annual increase in the number of households was 3.02 percent. That means in all three decades the growth rate of housing exceeded the growth rate of households and population. The main objective of the study is to measure efficiency scores of different states in Iran with respect to the construction activities and also to find out the impact of migrated laborers from the neighboring countries on the overall efficiency of such activities in the economy. That means to make it clear that; is there any significant difference between the efficiency scores of the states using more migrant labor force and those having less concentration of such laborers in their construction activities?

2. Afghan Migrant Labor in Construction Market

In the neighboring country of Iran, Jobs and income generation for Afghan people are two key elements to increase development and achieve stability in Afghanistan. With a jobless rate of 40 percent (out of a total labor force estimated at about 15 million people in 2004) and

44 percent of the population below the age of 14, the issue is of vital importance. Afghanistan has one of the highest population growth rates in the world, estimated at 2.69 percent. Added to the decades of instability and economic decay, there is a very high pressure to search for employment elsewhere (Zumot and Overfeld, 2010).Generally, studies of population movement across international borders have focused on two major forms: emigration of workers seeking a better life and exodus of refugees escaping war and destruction. Among the largest categories of population movement are the refugees. The movement of Afghan refugees has push factors of war and destruction in their home country and pull factors of employment, security, and community in their host countries. Temporary and seasonal migration of Afghans to Iran was common prior to 1979. It was driven primarily by the economic opportunities, poverty, and drought. But following the political upheavals and armed conflict in Afghanistan from the late 1970s onwards, Iran experienced a massive influx of Afghan refugees and it was so large that this group of refugees comprised the majority of laborers in the construction sector. There is enough evidence to suggest that cross border flows are still continuing and that there are many undocumented Afghans in the country (Davids and others, 2008).

The United Nations says that there are about 920,000 registered Afghan refugees in the country, but it estimates there are up to one million more living illegally that have not been granted the status of refugees and also the right of authorized settlement in Iran. Most of them are engaged in hard, hazardous, manual labor jobs such as ego system, animal husbandry, housing construction and transportation terminals, working as low wage contractors for the municipalities (Pasha, 2008).As far as the level of illiteracy is concerned, Afghan workers have a lower standard in education and about 46 per cent of them are not educated, while only 12 per cent of Iranian workers are in this category. Moreover, 48 per cent of Afghan workers have been educated below high school level, and the corresponding proportion of Iranian workers is 65 per cent.

According to the establishments' survey of International Migration research Program (International Labor Office, 2009) on Afghans labor market in Iran, that is found that, the Afghan share in the total work force is about 47 per cent. However, this most probably reflects the sample bias in favor of smaller enterprises in the informal sector.

About 80% of Afghans work in three sectors - manufacturing, construction, and trade and commerce. The survey attempted to assess reasons for reliance or preference of employers for Afghan workers. The findings indicate that the following are the most important reasons:

- The most quoted reason is the high sense of responsibility and dedication toward work on the part of Afghan workers compared to Iranian workers in the same job - reported by 73 per cent of employers.
- Ready for difficult and hazardous jobs: this is the second most important reason repeated - 59 per cent of employers believe this to be an important reason. The two factors/hard work and sense of responsibility/ combined account for 38 per cent of employer responses.
- Low level of Afghan wages comparing to Iranians - this is not as important as often believed because the above two factors seem to play a major role. Only 31 per cent of employers had mentioned this.
- Difficulty in hiring national workers was reported by only 13 per cent of employers. This indicates that local workers are available when Afghan workers are used.

In order to link the presence of Afghan workers and its effect on the level of labor payment in construction activities, Karimi (2003) has argued that the presence of Afghan workers has depressed wages, particularly in the construction sector, and made it unattractive for local workers. She argues that during the past two decades, increases in wages in the construction sector, with the largest demand for Afghan workers compared to other economic sectors, have been low. The average income of low-skilled workers in the construction sector has now reached a level even less than the minimum wage. According to the employer survey (International Labor Office, 2009), the average wage of Iranian workers was $195 compared to $172 for Afghan workers. In services the wages ranged from $148 (Afghan) to $162 (Iranian).By and large Iranian employers enjoyed a 10-23% wage differential. Many employers maintain that if they use Iranian workers and continue the business without Afghan workers there would be an impact on wages and prices. They believe that the Iranian labor force is not willing to do the jobs with the level of wages paid to Afghans.

The majority of Afghans live in urban areas among Iranians, though primarily in Afghan-dominated neighborhood provinces specifically condoned by the Iranian government for their residence. Their colonies tend to be located in geographical areas that have a high demand for manual labor, particularly in the fields of agriculture, construction, brick-making, stone-cutting, etc. Only approximately 3% (i.e., circa 25,000 Afghans) are accommodated in refugee camps (Koepke, 2011).A study analyzing the economic relevance of Afghan laborers in the 1990s in Iran has found that between 1994 and 1995, the Afghan labor force contributed to 4.4 percent to the Iranian GNP, in part by buying gifts, clothes, and other commodities to send home in the form of remittances and financial support (U.N. News Centre, 2008).

As far as the demographic distribution of migrated Afghan laborers is concerned, Studies show that The provinces of Tehran, Khorasan , Isfahan, Sistan & Baluchistan, and Southern Bandar Abbas (Hormozgan) account for close to 70% of the total Afghan population residing in Iran, while all other provinces had some Afghan population (International Labor Office, 2006). The study attempts to find out the impact of migrated Afghan laborers on the technical efficiency of the Construction sector of the Economy. That means to make it clear that; is there any significant difference between the efficiency scores of the states using more migrant Afghan laborers in their construction activities and those states having less concentration of such laborers in their activities?

3. Efficiency Measurement Concepts

Productivity and efficiency are the two most important concepts in measuring performance. The productivity of a producer can be loosely defined as the ratio of output(s) to input(s). Efficiency on the other hand can be defined as relative productivity over time or space, or both (Wang et. al, 2010).These concepts can be illustrated graphically using a simple example of a two input (x1, x2)-two output (y1, y2) production process (Figure 1 & 2). Efficiency can be considered in terms of the optimal combination of inputs to achieve a given level of output in Figure 1 (i.e. an input-orientation), or the optimal output that could be produced given a set of inputs in Figure 2 (i.e. an output-orientation) (Kumbhaker and Lovell 2000). In Figure 1, the firm is producing a given level of output (y1*, y2*) using an input combination defined by point A. Therefore the input-oriented level of technical efficiency (TEI(y, x)) is defined by 0B/0A and taking into account the least-cost combination of inputs that produces (y1*, y2*), the economic efficiency (EE(y, x, w)) is defined by 0D/0A. In Figure 2, the firm is producing (y1*, y2*) using a given set of inputs defined by point A. Therefore the output oriented measure of technical efficiency (TE_O(y, x)), can be given by 0A/0B and taking into account the highest-revenue combination of outputs earned by (y1*, y2*), the economic efficiency (EE(y, x, p)) is given by 0A/0D.

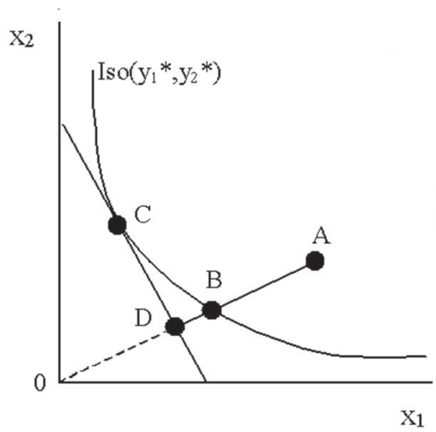

Figure 1. Input-Orientation model

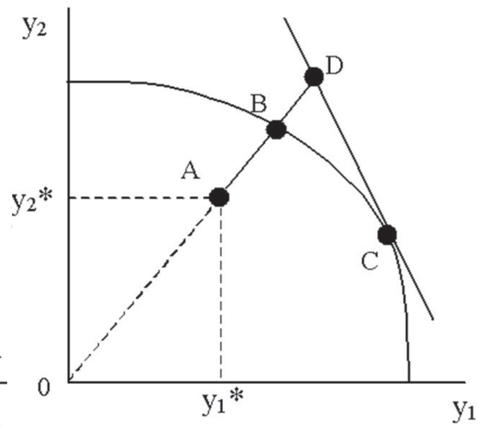

Figure 2. Output-Orientation model

Followed by Farrell (1957) and based on a non-parametric approach, Charnes et al. (1978) developed a linear programming methodology named Data Envelopment Analysis (DEA), to measure the efficiency of multiple Decision Making Units (DMUs), when the production process presents a structure of multiple inputs and outputs. In this method, DEA is concerned with the efficiency of the individual unit, which can be defined as the unit of assessment (Thanassoulis, 2001) or the decision making unit (DMU) by comparing it with other homogeneous units transforming the same group of measurable positive inputs into the same types of measurable positive outputs. A commonly accepted measure of efficiency is given by the ratio of the weighted sum of outputs over the weighted sum of inputs. It is however necessary to assess a common set of weights and this may raise some problems (Coelli, and others, 1998). With DEA methodology each DMU can freely assess its own set of weights that can be inferred through the process of maximizing the efficiency. Given a set of N DMUs, each one producing J outputs from a set of I inputs, let us denote by y_{jn} and x_{in} the vectors representing the quantities of outputs and inputs relative to the m-th DMU, respectively. The efficiency of the m-th DMU while assuming constant returns to scale (CRS), can thus is calculated as:

$$e_m = \frac{\sum_{j=1}^{J} u_j y_{jm}}{\sum_{i=1}^{I} v_i x_{im}} \quad , \quad \begin{bmatrix} j = 1, \ldots, J \\ i = 1, \ldots, I \end{bmatrix} \tag{1}$$

Where u_j and v_i are two vectors of weights that DMU m uses in order to measure the relative importance of the consumed and the produced factors. As mentioned, the set of weights, in DEA, is not given, but is calculated through the DMU's maximization problem, that is stated below for the m-th DMU.

$$\begin{aligned} & \max e_m \\ & s.t. \\ & \frac{\sum_{j=1}^{J} u_j y_{jn}}{\sum_{i=1}^{I} v_i x_{in}} \le 1 \qquad \forall n = 1, \ldots, m, \ldots, N \\ & 0 \le u_j \le 1 \qquad 0 \le v_j \le 1 \end{aligned} \tag{2}$$

The above Fractional Programming (FP) is equivalent to the following linear programming (LP) formulation given in equations (3). In order to simplify the computations it is possible to scale the input prices so that the cost of the DMU m inputs equals 1, thus transforming problem set in (2) to the ordinary linear Programming problem stated below (3):

$$
\begin{aligned}
&\max h_m = \sum_{j=1}^{J} u_j y_{jm} \\
&s.t. \\
(3) \qquad &\sum_{i=1}^{I} v_i x_{im} = 1 \\
&\sum_{j=1}^{J} u_j y_{jn} - \sum_{i=1}^{I} v_i x_{in} \leq 0 \qquad \forall n = 1,\ldots,m,\ldots,N \\
&\varepsilon \leq u_i \leq 1 \quad , \quad \varepsilon \leq v_i \leq 1 \quad , \quad \varepsilon \in R^{+}
\end{aligned}
$$

The above mentioned CCR model in (3), measures the maximum efficiency of each DMU by solving the fractional programming (FP) problem in (1) and does not take into consideration scale effect.If the solution to the maximization problem gives a value of efficiency equal to 1, the corresponding DMU is considered to be efficient and operating at best practice or non-dominated, if the efficiency value is inferior to 1 then the corresponding DMU is dominated, and therefore does not lay on the efficiency frontier. In addition to the linearization, a further constraint is imposed on weights that have to be strictly positive, in order to avoid the possibility that some inputs or outputs may be ignored in the process of determination of the efficiency of each DMU.When DMUs are not all operating at an optimal scale, it becomes necessary to extend the basic model called BCC, in order to account variable returns to scale (VRS) assumption, which is suggested by Banker and others in [Banker et al., 1984].

4. Data, Models and Analysis Performed

The research applied data envelopment analysis (DEA) to evaluate the overall efficiency of housing construction in 30 states of Iran during 2006-2009. At present Iran's territory consists of 30 provinces, each one governed by a local centre, usually the largest local city. Provincial authority is headed by a governor, who is appointed by the Minister of Interior, subject to approval of the cabinet. Regional planning is directed through the budgeting system which is annually proposed by the central government and approved by the parliament (Sepehrdoust, 2009). In the analysis, the decision making unit represents a State Housing Construction for the urban citizens given three inputs and three outputs. The first input being total area of lands under building construction (scale: 1000 square meters), the second input being total private investment on building construction (scale: 1000000 Rials),and the third input being total expenditures of building construction (scale: 1000000 Rials).The first output being total number of buildings constructed (units),the second output being total area of flats constructed (scale: 1000 square meter),and the third output being total land value of buildings after construction (scale: 1000000 Rials) (Table 1 and 2). According to Golany and Roll (1989), the number of DMUs should be at least twice that of the total number of input and output factors considered when applying the DEA model. Data used in the analysis are collected from Central Bank of Iran, Ministry of Housing and Urban Planning, and Iran Statistical Centre relative to years 2006-2009.

Table 1. Inputs and outputs specification in the model

Inputs
1 Total Area of Lands under building construction (scale: 1000 square meters)
2 Total Private Investment on building construction (scale: 1000000 Rials)
3 Total expenditures of building construction (scale: 1000000 Rials)
Outputs
1-Total Number of Buildings Constructed (units)
2- Total Area of Flats Constructed (scale: 1000 square meter)
3- Total Land Value of Buildings after Construction (scale: 1000000 Rials)

Table 2. Descriptive Statistics of the Variables (Inputs- Outputs)

Variable	Mean	St.Dev	Minimum	Maximum
Input 1	8142475	14515978	1132499	81174854
Input 2	3114	2683	467	11575
Input 3	3695450	23261075	2313331	130809299
Output 1	5022	6949	717	38393
Output 2	15309480	36904371	1574218	205728415
Output 3	12412	11009	1844	47152

In this study the idea behind applying input oriented DEA technique based on the assumption of constant returns to scale (CRS) is that, if any state could use the given range of physical inputs in a technically efficient manner and increase the quantities of outputs at best practice, that state is said to be 100% technically efficient.

Consider a simple example of five DMUs (States), denoted as A, B, C, D and E in Figure 3, each using different combinations of inputs(X1,X2), required to produce a given output quantity, say, number of residential buildings. In order to facilitate comparisons, input level must be converted to those needed by each DMU to "produce" one unit of building. A frontier curve is drawn from A to C to D which approximates a smooth efficiency frontier using information available from the data and that curve envelopes all other data plotted in Figure 3 (Bosetti and others, 2004). DMUs (states) on the efficient frontier are assumed to be operating at best practice (i.e. efficiency score equal to one).While, states B and D are considered to be less efficient. DEA compares B with the virtual constructed state B′, which is a linear combination of A and C. States A and C are said to be the "peer group members" of B and the distance BB′ is a measure of the efficiency of B. Compared with its benchmark B′, state B is inefficient because it produces the same level of output but at higher costs due to relative overusing of inputs.

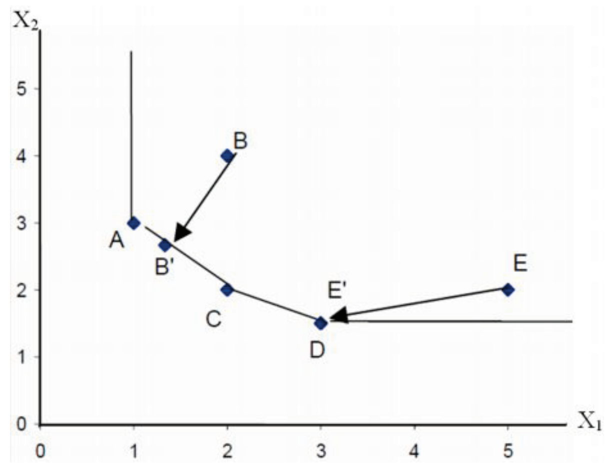

Figure 3. Graphical illustration of efficient frontier with 5 DMUs

Therefore peer states are those active states with higher referenced frequencies which can be regarded as better performing units due to their outstanding operating environment (Hlingsworth and Parkin, 1995). In this study it is important enough to identify the number of times that an efficient States acts as a peer state for other in efficient States.

5. Results

For the validation of the model, regression analysis on the selected input and output factors has been applied to investigate strong and positive relationships between the factors. Following Golany and Roll (1989), regression analysis on the selected input and output factors is a useful procedure to examine the isotonicity relationships between the input and output factors. In this analysis if the correlation of the selected input and output factors is positive, these factors are isotonically related and can be included in the model. Therefore the factor that has a weak isotonicity relation to the other factors should be reexamined. Alternatively, a strong correlation may indicate that the information contained in one factor is already represented redundantly by other factors (LIU, 2005). By producing the significant p-values less than $\alpha = 0.05$, the results proved that there is a strong and positive relationships between the factors selected which means; an increase in any input definitely results in an increase in any output (Table 3).

Table 3. Regression Analysis of the Variables (Inputs- Outputs)

Variable	Output 1	Output 2	Output 3
Input 1	0.992 (0.000)	0.993 (0.000)	0.795 (0.000)
Input 2	0.846 (0.000)	0.738 (0.000)	0.923 (0.000)
Input 3	0.788 (0.000)	0.993 (0.000)	0.788 (0.000)
$(O_1) = 245 + 0.000319(I_1) + 0.453(I_2) + 0.000056(I_3)$ S = 509.965 R-Sq = 99.5% R-Sq(adj) = 99.5%			F P 1786.30 0.000
$(O_2) = -2772952 + 1.41(I_1) + 1568(I_2) + 0.837(I_3)$ S = 3511969 R-Sq = 99.2% R-Sq(adj) = 99.1%			F P 1058.74 0.000
$(O_3) = 2708 + 0.00376(I_1) + 3.25(I_2) - 0.00227(I_3)$ S = 3767.34 R-Sq = 89.5% R-Sq(adj) = 88.3%			F P 73.89 0.000

The CCR model, assuming constant returns to scale has been applied to measure the overall efficiency of the state housing construction. It is found that the average efficiency score obtained by all states is 0.94 and only 37 percent of the states operate technically efficient (Table 4).

Table 4. Efficiency Scores of State Construction units using DEA Model

States (DMUs)	Overall Efficiency	Technical Efficiency	Scale Efficiency	Returns To Scale	Peer Group Frequencies
1-East Azarbaijan	1.000	0.981	1	IRTS	10
2-West Azarbaijan	1.000	1.000	1	CRTS	14
3-Ardabil	0.995	0.997	0.998	DRTS	0
4-Esfahan	0.959	0.985	0.974	DRTS	0
5-Ilam	0.773	0.773	1	DRTS	0
6-Bushehr	0.965	0.965	1	DRTS	0
7-Tehran	1.000	1.000	1	CRTS	9
8-Charmahal & Bakhtry	0.943	0.951	0.992	DRTS	0
9-South Khorasan	0.920	0.927	0.992	DRTS	0
10-Razavi Khorasan	1.000	1.000	1	CRTS	6
11-North Khorasan	0.971	0.971	1	DRTS	0
12-Khuzestan	0.895	0.994	0.900	DRTS	0
13-Zanjan	0.999	1.000	0.999	CRTS	0
14-Semnan	1.000	0.999	1.000	CRTS	15
15-Sistan & Baluchistan	1.000	1.000	1	CRTS	4
16-Fars	0.859	0.895	0.960	IRTS	0
17-Qazvin	1.000	1.000	1	CRTS	10
18-Qom	0.839	0.973	0.862	DRTS	0
19-Kurdistan	0.987	1.000	0.987	DRTS	0
20-Kerman	0.751	0.910	0.825	DRTS	0
21-Kermanshah	1.000	0.960	1.000	DRTS	3
22-Kokiluye & Bu.Ahmad	0.983	1.000	0.983	DRTS	0
23-Golestan	0.927	0.991	0.935	DRTS	0
24-Gilan	0.942	0.956	0.985	DRTS	0
25-Lorestan	1.000	1.000	1	CRTS	6
26-Mazandaran	0.881	0.961	0.917	DRTS	0
27-Markazi	0.859	0.966	0.889	DRTS	0
28-Hormozgan	1.000	1.000	1	CRTS	1
29-Hamedan	0.875	0.974	0.898	DRTS	0
30-Yazd	1.000	1.000	1	IRTS	4
Average	0.944	0.971	0.969		

The eleven technically efficient states are East Azarbaijan, West Azarbaijan, Tehran, Razavi Khorasan, Semnan, Sistan & Baluchistan, Qazvin, Kermanshah, Lorestan, Hormozgan and Yazd. Among the overall efficient states there are generally developed states like Tehran, Semnan, Razavi Khorasan, Yazd, Qazvin and also economically deprived states such as West Azarbaijan, Sistan & Baluchistan, Lorestan, Kermanshah and Hormozgan.On the other hand the research found that about 63 percent of the states are relatively inefficient out of which the states Qom, Ilam, and Kerman obtained the lowest efficiency scores (i.e., 0.839, 0.773, 0.751) and states Zanjan, Ardabil, and Kurdistan achieved the highest efficiency scores (i.e., 0.999, 0.995, 0.987).

In order to test the hypothesis that, there is significant differences between the efficiency scores of the states using more migrant Afghan laborers and those states having less concentration of such laborers in their construction activities, statistical analysis has been applied using Minitab statistical Package .The results proved the hypothesis to be correct (P-Value = 0.017 in Table 5).

Table 5. Two-Sample T-Test and CI: C1, C2

Two-Sample T-Test for C1 vs C2 and CI: C1=Afghan workers concentrated C2= Afghan workers not concentrated				
	N	Mean	St.Dev	SE.Mean
C1	23	0.9336	0.0775	0.016
C2	7	0.9786	0.0308	0.012
Difference = mu (C1) - mu (C2)				
Estimate for difference: -0.044963				
95% upper bound for difference: -0.010913				
T-Test of difference = 0 (vs <):				
T-Value = -2.26	P-Value = 0.017	DF = 25		

In further analysis, the BCC model (Banker, Charnes, and Cooper, 1984), assuming variable returns to scale (VRS) has been applied to decompose the total efficiency into the technical and scale efficiency. Variable return to scale models have been mainly considered, given the presence of regional or local budget constraints, imperfect competition, constraints on finance, which may cause one or more DMUs to be not operating at optimal scale. On the basis of microeconomic production theory a DMU that is overall inefficient could be either technically inefficient or scale inefficient. The overall efficiency of a DMU in this model is assumed to be equal to its technical efficiency if and only if that DMU is operating at the most productive scale size, and thus, its scale efficiency is 1. Alternatively if the scale efficiency is less than 1, the DMU will be operating either at decreasing returns to scale (DRTS) or increasing returns to scale (IRTS). This implies that resources may be transferred from DMUs operating at decreasing returns to scale to those operating at increasing returns to scale in order to increase the overall average productivity at both sets of DMUs. The fact behind this reason may be that these inefficient DMUs, due to their relatively poor quality inputs or mismanagement, do not possess economies of scale, or possibly, have been unable to compete with other efficient DMUs (Boussofiane et al., 1991). As a result the inefficient DMUs with positive slacks are considered to be operating at decreasing returns to scale which need to cut their inputs and inefficient DMUs with negative slacks are considered to be operating at increasing returns to scale which need to increase their inputs in order to achieve maximum outputs.

6. Conclusions

Iran is one of the few major economies that did not suffer directly from the current downturn crisis. Because of its comparative flourishing economy, massive influx of Afghan refugees to Iran in the last two decades has been triggered by political crisis and armed conflict in Afghanistan and it was so large that this group of refugees comprised the majority of laborers in the fields of agriculture, construction, brick-making, stone-cutting, etc. Given Iran's extensive employment market, primarily in the construction, agricultural and general manual labor sectors, it is not surprising that many Afghans from regions of high unemployment in Afghanistan continue to be attracted to Iran. The movement of Afghan refugees has push factors of war and destruction in their home country and pull factors of employment, security, and community in Iran. The majority of them have opted to accept the hospitality of the host government and not to repatriate voluntarily.

In order to evaluate relative impact of migrant Afghan labor force on construction sector performance in Iran, data envelopment analysis (DEA) proved to be a useful non-parametric technique. Therefore two DEA models (CCR and BCC models) were used to measure the overall efficiency of the states in the field of construction activities, in which a great portion of Afghan migrant share their work force. Based on the results, the research found that only 37 percent of the states operate as technically efficient and the average efficiency score obtained by all states is 0.94. Moreover it is found that among the technically efficient states, there are many states which have the opportunity to deploy migrated building workers in construction activities. Further analysis show that wage rates are not the major factor for hiring Afghan workers but more their attitudes of hard work and sense of responsibility and flexibility.

That is important to mention that in the current downturn with respect to declining oil prices and global economic sanctions imposed on Iran, the government's housing growth plans can present an opportunity for ensuring new homes are delivered of the right type, in the right place, and linked to wider economic outcomes of the nation. As far as the construction activity is concerned, the study strongly suggest that the housing sector in Iran needs to aim at mobilizing the combined resources of communities through stabilizing the housing environment, ensuring maximal benefit of state housing expenditure, facilitating technical and logistical housing support mechanisms to enable communities to improve their housing circumstances, mobilizing private savings and housing credit at scale with adequate protection for consumers, providing subsidy assistance to disadvantaged individuals to assist household's affordability, and finally coordinating and integrating public and private sector investment on a multi-functional basis.

Since the commencement of the voluntary repatriation program for Afghan refugees in April 2002 until January 2010, approximately 1.9 million Afghans returned to Afghanistan both with the assistance of UNHCR and as spontaneous returns (UNHCR, 2009 and 2010). However, since 2008, the number of voluntary repatriations has dramatically fallen. Though it is claimed by the government that, the construction services would be impacted by the repatriation of migrant laborers, but the employers believe that the prospects for substituting Iranian workers for repatriated Afghans may be limited, because they are mostly concentrated in sub-sectors and working under conditions which are unattractive to Iranians. The government is now making serious attempts to regularize the employment of all Afghans living in Iran. While more sustainable medium term and long-term solutions are being sought, steps should be taken to create acceptable conditions for those who remain given their already marginal and precarious position. The lack of employment authorization has made a large number of Afghan workers vulnerable to exploitation and absence of any form of social protection.

It is necessary to undertake further research and document the contribution of Afghan workers to the Iranian economy, their impact on the labor market and specific economic sectors, their interaction with national workers and remaining impediments to return.

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